

**SOUTH AUSTRALIAN SOCIETY OF MODEL
& EXPERIMENTAL ENGINEERS**

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CLUB JOTTINGS

By smokey

WINTER RUNNING JUNE 2003

My, isn't time slipping by? here we are into June with the year nearly half over. The PFD on Sunday 1st June was not well patronised in spite of a mild temperature of 19 degrees although a few spots of rain fell later in the day. There were no birthday parties of note and the abundance of power that turned up meant that rides were a plenty.

The boat pond was in a dismal state and the only noteworthy movement was Douglas Wallace shuffleing about raking up small mounds of mud for eventual removal on the work day. Douglas has certainly been very helpful during the pond cleanup [see separate report]. This area was not a complete loss as Norm Kernick ran his hot air engines.

SASMEE PARK STATION

Station masters Jeff Schaefer and Graham Brown dispatched the following trains:-

2-8-4	Mod. CARIBOU	Gavin Thrum
0-6-0	SCHENECTADY	David Hawkins
2-8-0	NIGEL GRESLEY	Rodney Harris
	[F.T.R. Lack of riding truck]	
4-4-0	VIRGINIA	Brad Cottle
-----	NSW 422 Class D/E	Malcolm Ambler
-----	STEEPLECAB ELEC.	Ian Clark
-----	SHUNTER J004	John Monte

Full marks to John Monte's miniscule shunter, it has proven to be a reliable hauler.

Once again Malcom Amblers "422" Class AME design model put in another faultless performance, although bad luck in the rolling stock area saw him remove one carraige.

MILLSWOOD STATION

Station masters Alan Brabham and Alex Metropoulas dispatched the following trains:-

0-6-0	JINTY	Len Redway
0-4-0	DOLGOCH #2	Craig Dunstan
0-4-0	DOLGOCH #2	Peter Denholm
0-4-2	TALYLLNN #1	Bert Francis
-----	SHAY #12 [F.I.T.]	Graeme Driscoll

The two station masters at this station have been giving stirring service for some time now.----- could be up for long service leave at some future date. Good work chaps.

BOAT POND CLEANOUT----UPDATE

The cost from Collex was well within budget and overall an excellent result was achieved, much to the delight of the boat boys and all. Upon its removal the center pivot pin was found to be in excellent condition despite its submergence in water for 45 years. In addition to the two fastening points another four were added for good measure. The open type ball race was replaced by a sealed unit. Filling commenced on June 7th with the bore and by June 14th the pond was full to capacity and looking great. A management program will need to be initiated so that the problems of the past do not re-occur.

[ERRATA--Last Bulletin. Page 12--Boat Pond Cleanout

The original pivot should read 1958, not 1978]

ENTERTAINMENT

The June meeting was entertained with a 35 minute video taken by Barry Dunstan of the 47th AALS Convention at Penfield. This was followed by a talk by Graeme Driscoll on patterns for boiler making. Additionally Graeme also showed the component parts for the boiler he is presently constructing for a 5" gauge articulated locomotive, a Kitson-Meyer.

The July meeting, with a huge attendance of at least 55 members, was addressed for some 70 minutes by Bob Sampson of the National Railway Museum at Port Adelaide, on the early formation of Railway Exhibits at Mile End to the eventual shift to the present site in 1988.

Bob spoke on the highs and lows of the Railway Museum since its inception in 1964. The present unacceptable climate in relation to the ever increasing premiums for public risk insurance is setting the alarm bells ringing, not only for them but all heritage railways and tramways in South Australia. It is hoped that a suitable solution can be found.

The August meeting was the AGM and following this Barry Dunstan showed 40 to 50 slides from the late Fred Gordon's collection depicting scenes at SASMEE from the early 60's to the late 70's. Following this, member Douglas Wallace gave a talk on some of the nautical models that he has constructed. Regulars at public field days would be familiar with some of Doug's interesting models namely, speed boat towing bikini clad girl on ski's, "U" boat submarine, steam launch and even a Loch Ness Monster.

LOCO TRIALS / SAFETY VALVE RUN

This year our annual safety valve run was combined with a locomotive efficiency trial similar to IMLEC in the UK. As this was SASMEE's first effort we had little knowledge of just what to do and expect. Thanks must go to Allan Wallace who got the idea off the ground and did most of the organising.

Many members signified their willingness to help out so Allan had little difficulty in making a roster for the various tasks.

All of this would not have been possible without Allan's 5"g Dynamometer car and support car to carry the computer gear. The trial was to be conducted on the 7 1/4" dual gauge track thus allowing 5"g locos to access via the interconnector. Millswood Station track was to be used as the main line thus allowing following participants to wait on the loop line after coming out from the turntable. Seven and a quarter gauge participants were expected to make their own adaptor couplings to the front of the 5" Dyno car. This proved to be no problem.

The day started out cold, sunny periods and 14 degrees, although some drizzle developed in the late afternoon. All nine participants turned up and the first one got away shortly before tabled time and this pattern virtually related to the rest. Only one participant was not ready on time so he swapped with the one after so no time was lost. Every one seemed to be putting their money on a 7 1/4" loco winning the trail. Some of the drivers came to realise that driving nonstop for thirty minutes, firing on the run, maintaining sufficient water level and keeping an eye on the track conditions is no easy task compared to a PDF when the trains stop regularly, a rest can be taken whilst leisurely coaling/watering intermingled with chatting to passengers.

The day went all too quickly and was thoroughly enjoyed by all 60 people who turned up for the event. [See separate report for trail results]

At 5.30pm John Lewis and Glen templeman set out to purchase our pre-ordered tea of Villis pies, pasties and sausage rolls together with Pizza Hut pizzas. At 6.00pm all trains were halted at canteen corner while 40 people sat down to enjoy a piping hot meal under the protection of the verandah. At this hour it was very cold and still, and with some slight drizzle, ideal for good steam effects.

cont'd

From here on the Safety Valve Run was in full swing. night running at SASMEE is a unique experience particularly in winter when the blackness of the night is punctuated by the many colored searchlight signals which light up the seemingly endless clouds of steam being emitted by locos which appear to be enjoying the event as much as their drivers.

The fires were finally dropped around 11pm after a very successful day , and night.

The talk seems to be that we should run the trail again next year.

Perhaps, with knowledge that we have now gained, an entirely different outcome will emerge --- or will it??

The following locos were in attendance:-

Trial Participants

71/4" gauge

0-6-0	KOPPEL	Glen Templeman
4-6-2	Green Pacific #8443	Ian Thomas
0-4-0	DOLGOCH #2	Barry Dunstan
0-4-0	JENS #1938	Bill Coles
-----	SHAY #12	Graeme Driscoll

5" gauge

2-8-0	NIGEL GRESLEY	Brian Homan
0-6-0	SCHENECTADY	John Beal
0-6-0	SPEEDIE	Allan Wallace
2-8-2	SAR 700 Class #702	Bob Smith

Non Trial Participants

5" gauge

-----	Shunter J004	John Monte
2-8-4	SAR 720 Class #720	John Mere
4-6-4	QR Tank BLUE BABY	Dave Worral
2-8-4	Mod. CARIBOU	Gavin Thrum
2-8-0	CARIBOU #8307	Brad Cottle
4-4-0	VIRGINIA	Brad Cottle
2-8-0	NIGEL GRESLEY	Rodney Harris

71/4" gauge

----- Electric Shunter ZIPPY Graham Dicker

Congratulations to Allan Wallace who, masterfully, ran his 5 inch gauge "SPEEDIE" to an efficiency level of 1.8%. Thus taking out the coveted trophy.

The presentation of the trophy was made by the President at the July General Meeting.

WINTER RUNNING ----- JUNE 2003

The PFD on Sat. 21st June could be at best described as an ideal patron`s day, that is not many patrons equals plenty of rides, in other words a day that was not out of the ordinary. The usual team of Jean Clark and Marg Lewis staffed the canteen assisted by Jeanette Francis and Kristine and Janelle Templeman.

The boat pond, looking resplendant after its recent drainage and maintainance program, was host to more boats than locos.

There were 11 boats and 1 submarine.

As someone remarked, "11 floaties and 1 sinker"

Doug Wallace`s "U"boat looked very impressive, fully submerged and with only a periscope and antenna breaking the surface. Just a couple of months ago this craft could have been lost and possibly not recovered on account of the prolific weed growth. The pond varies in depth from 500mm to 800mm when at full capacity. With the State Government having implemented water restrictions from 1/7/03 we can be thankful for the use of the bore. It completely filled the pond in 7 days.

Five trains operated out of SASMEE Park Station while three trains operated out of Millswood Station. The only incident was one small child running into another causing a blood nose, which was duly attended by the St. John attendant.

71/4 INCH GAUGE TRACK

Due to age and the passage of time the longitudinal timbers supporting the track on the Adelaide end of the trestle bridge had warped slightly allowing the track to dip slightly to the left.

Remedial action involved lifting the track from the points actuator button to the points [approx.30ft] and planing the timbers, thus allowing the track to go back on an even keel. Many thanks to Alex Metropoulos for supplying the planing equipment.

WINTER RUNNING JULY 2003

The PFD on Sunday 6/7/03 was a bumper day in both weather and patronage. Every body was well behaved and this was probably due, in some way, to only one small birthday party in attendance. Whilst we do not discourage birthday parties it is generally accepted that hordes of unaccompanied children often create a headache at the two stations, especially for the station attendants who have an arduous task of loading the trains to SASMEE specifications.

The boat pond is a magnificent host to the many craft that have been plying the waters since the recent overhaul. Doug Wallace`s speed boat hauling a bikini clad damsel on ski`s drew many favourable comments from onlookers.[con`td]

Also popular was his black hulled German "U" boat. In addition to his "Port" line freighter Bob Smith also used his tug boat to position the freighter in the Harbour. The Harbour is duly protected by an operating light house, courtesy of Bob Smith.

There was an excellent ro;;up of power which ensured that both stations were able to cope quite satisfactorily. Unfortunately, again, Rodney Harris was unable to run his Nigel Gresley due to a lack of riding trucks. He reports that his own is nearly finished.

SASMEE PARK STATION

Station masters Des Goedecke and Graham Brown dispatched the following trains:-

2-8-4	Mod. CARIBOU	Gavin Thrum
4-6-0	LNER Class B1 #1088	Terry Trezise
4-6-4	QR Tank BLUE BABY	Dave Worrall
-----	Steeplecab G/E	Ian Clark
-----	NSW 422 D/E	Malcolm Ambler
-----	Shunter J004	John Monte

MILLSWOOD STATION

Station masters Alan Brabham and Alex Metropoulos dispatched the following trains:-

0-4-4	SAR V Class #9	Bert Francis
0-4-0	DOLGOCH #2	Barry Dunstan
0-6-0	KOPPEL	Glen Templeman
4-6-2	Green Pacific #8443	Ian Thomas
-----	SHAY #12	Graeme Driscoll
-----	WAGR B Class KARALEE	Les Smith

The boiler house boys, Bob Scanlon, Colin Cook, David Eustice and Ralph Ollenshaw always manage to put questioning minds at ease. Our full size machinery is steeped in history and SASMEE is the only local venue where the public can view real steam working from a bygone era.

The ladies in the canteen, Dorothy Ambler, Margaret Lewis and Jean Clark reported a very brisk trade. The fact that they sold out of hot chips [20kg] bears testimony to this.

NEW MEMBERS

SASMEE extends a cordial welcome to the following new members and trust that they will join in the fellowship that our hobby provides.

Michael Tingay	Full Member	Elected July 03
Jodie Monte	Junior Member	Elected July 03
Graham Richards	Full Member	Elected June 03
Robin Kershaw	Full Member	Elected June 03

DOUBLE HEADING

This type of practise is extremely rare during public running at SASMEE. However on Saturday 19th July the 5"g track had its initiation into this type of running when Glen Templeman's Three cylinder 4-6-0 double headed with Brad Cottles 2-8-0 Caribou Hauling 2 carriages. Things ran smoothly all afternoon with this type of ride proving very popular with patrons. Who knows, perhaps these two locomotives will strike up a permanent friendship?

WINTER RUNNING AUGUST 2003.

Just how good can things get??

The PFD on Sunday August 3rd could best be described as a super day --- no, better than that, a Mega day to be sure.

Jack Davey on the gate had to contend with a queue that stretched all the way down the laneway out into Millswood Crescent. There were no less than ten Birthday parties scattered around the grounds and Jack had to co-ordinate heaps of names for at least five parties. As has been said before it takes far more than this to get Jack flustered, no wonder he enjoys the job so much. We were fortunate in having three visitors for the day, namely, Murray Hill from Victoria [Altona & South Western Society] John Nicholson from Canberra [Canberra Society] and one of our Life Members, Len Peckham who now spends most of his time at the Roseworthy Club. The boat Boys, Bill Weste, Dean Deguito, Bob Smith, Norm Kernick, Doug Wallace and Mary and Gerry Turner ran their craft much to the enjoyment of the huge crowd who had taken up every vantage point adjacent to the pond. People had streamed into the area carrying chairs, folding tables, eskies, birthday cakes and more food than what you see at Hungry Jacks Restaurant [so someone said].

The steam house had a new toy to play with in the way of a two chime steam whistle. Ralph Ollerenshaw found it a couple of weeks ago buried in the tool cupboard so decided to pipe it up and give a demonstration every now and then. It certainly has a good note and created a bit of interest. Of course the main interest is the train rides and both stations were extremely busy with barely adequate on the 5"g circuit.

With no actual roster of locos the Club has to accept whatever turns up. Luckily we always manage to get by.

SASMEE PARK STATION

Phil Waugh and Graham Brown Dispatched the following:-

SCHENECTADY

John Beal

NIGEL GRESLEY

Brian Homan

NIGEL GRESLEY

Rodney Harris

Steeplecab Electric

Ian Clark

JUNIOR Shunter J004
Heisler

John Monte
Graeme Driscoll

MILLSWOOD STATION

KOPPEL	4 Cars	Glen Templeman
DOLGOCH	3 Cars+ B/Van	Craig Dunstan
TALYLLYN	2 Cars	Bert Francis
DOLGOCH	2 Cars	Peter Denholm
#8443	2 cars	Ian Thomas

The above 7 1/4" g power looks impressive, however all did not run smoothly. One loco had problems keeping up steam, one loco retired early, one loco started late and another had its whistle jam open and spent some time running around with rag wrapped around it to stifle the ear splitting shrill. [a bandaïd as someone joked] All in all, we enjoyed ourselves and we gave enjoyment to our valued patrons.

BITUMEN DONATION

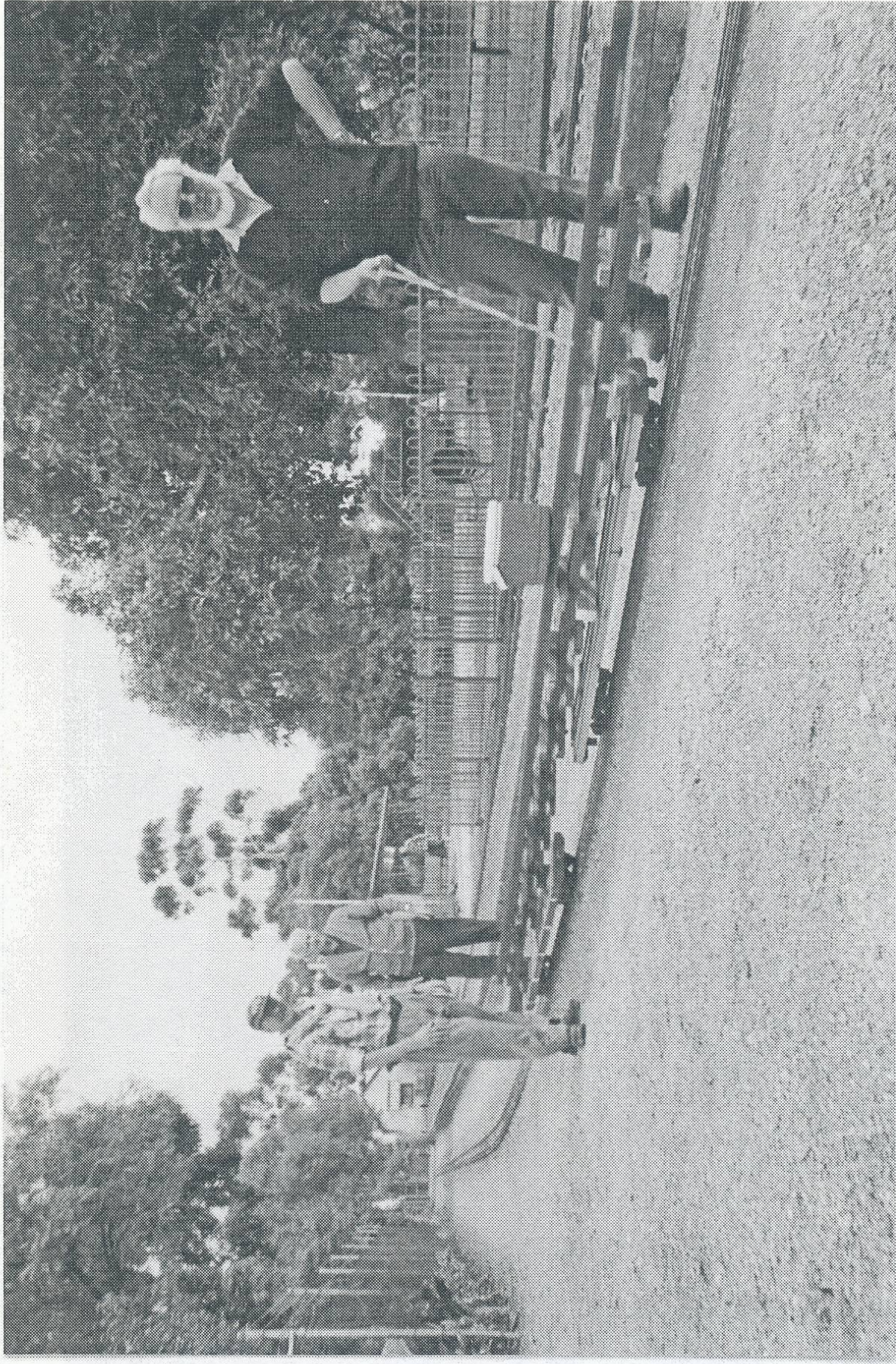
For a number of years the Bitumen just inside the main entrance gates has an area which has sunken due to bad compaction when the sewer was laid. Repair thereof has been put on the back burner for ages and ages due to mainly to the inability to get a contractor to do such a small job. Coldfix had also been suggested as a remedy but nothing was ever done. Recently luck came our way.

The neighbor on the Eastern side of the laneway had a blocked sewer which could not be cleared and United Water was contracted to renew it. Due to trees on the property they decided to lay the sewer down the laneway and promptly dug it up on Wednesday 23rd July which also prevented the SASMEE workers from bringing their vehicles in. When completed the hole was filled in, compacted and topped up with Dolomite.

A fortnight went by and on Wednesday 6th August Creative Asphalt [free plug] turned up to finish the job by laying Bitumen and finished it off with a Whacker.

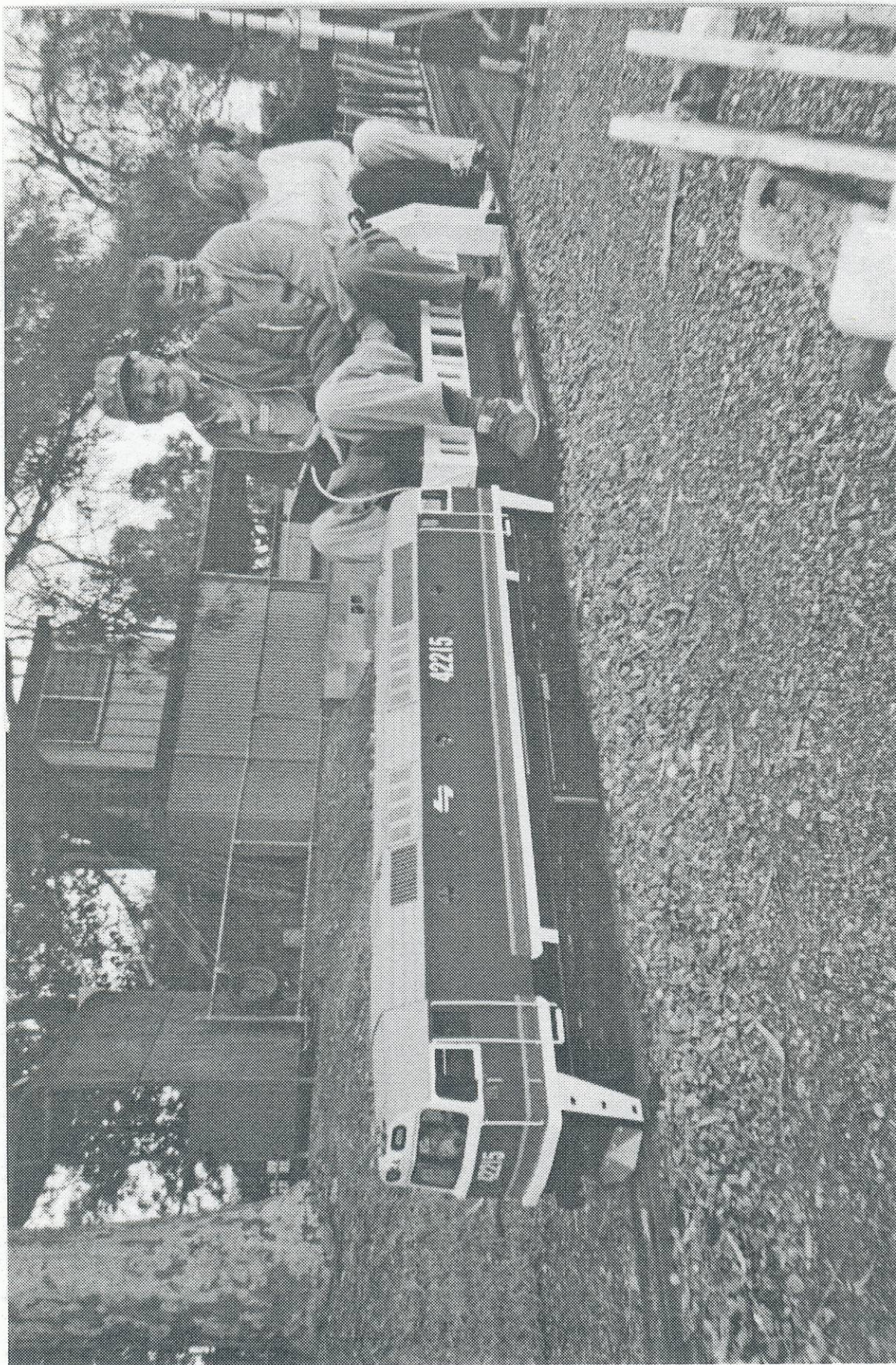
SASMEE entry was delayed again and the contractor felt somewhat beholding. After a bit of sweet talking and the promise of some free passes the guys were only too happy to back their truck down the lane to our gateway and shovel out the required quantity to fill the sunken area and finish it off with the Whacker!

The morale of the story is --- everything comes to those who wait!



Removing redundant rail by rail makes things
easier for Brian Homann, Dave Worrel and
Malcolm Ambler. 4/6/03

9A



The smile on Malcolm Ambler's face says all is well
with his recently completed NSWGR 422 Class D/E
PFD 17/5/03



9C

John Montes shunter J004 confidently handles its load.
PFD 17/5/03



Cleaning remnants of sludge from the boat pond.
Harbor in the foreground. 4/6/03

BRIDGES

The pedestrian bridge just outside SASMEE Park Station was built more than 25 years ago and carries all foot traffic across the tracks in that vicinity. The bridge received some attention recently in order to make it more user freindly. The track on the 7 1/4" g trestle bridge was recently given an extra expansion joint [EJ] in order to alleviate buckling which occurred on one occassion last summer.

WINTER RUNNING AUGUST 2003

Supposedly the last run for winter months the Saturday PFD was held amid a cool and sunny day of 16 degrees. Our loco power coped really well with the crowd that turned up and all had numerous rides. At least 11 boats sailed/steamed on the tranquil waters of the pond. At the boat harbour Bob Smith has installed a scale model of the Port Fairy light house which gives a half second flash of light every five seconds.

SASMEE PK STATION

Station Masters Des Goedecke and Phil Waugh, with new member Michael Tingay learning the ropes, dispatched the following trains:-

4-6-0	3 cyl. freelance	Glen Templeman
2-8-0	NIGEL GRESLEY	Brian Homann
2-8-0	NIGEL GRESLEY	Rodney Harris
-----	NSWGR 422 Class D/E	Malcolm Ambler
-----	J 004 Shunter	John Monte
-----	Heisler	Graeme Driscoll
-----	Streeplecab Electric	Ian Clark

MILLSWOOD STATION

Station masters Alan Brabham and Alex Mitropoulos dispatched the following trains:-

0-4-0	DOLGOCH #2	Craig Dunstan
0-4-2	TALYLLYN	Bert Francis
0-6-0	ROB ROY	Alan Sambrooks

It was welcome to Alan Sambrooks who had his first Public run with his newly acquired loco. His son Lawrence will no doubt be itching to obtain his competency certificate in order to drive Dad's loco.

SASMEE ANNUAL LUNCH

Don't forget that the club's annual lunch date is fast approaching --- the third Sunday in November, which is the 16th.

The venue has yet to be decided upon but it will be local whereby all members will have the opportunity to get together. Previous years have seen excellent attendances. Mark the date in your calender.

COAL STORAGE

The coal bunker, which was authorised by the June General Meeting, is under construction by member Simon Huntington. [Huntington Engineering] and when completed and installed should hold 2t. The dirty job of bagging and then unbagging will be a thing of the past.

A concrete pad 9' x 5' has already been laid upon which the bunker will stand.

SIGNALLING

Our signals and telgraphs man, Ian Clark, is currently wiring up a new signal to protect the points at the junction of the Millswood loop and the turntable/sheds roads. Drawf signals will also be incorporated. The wiring is fairly complex and no doubt Ian will give a full explanation prior to the introduction of the system which will eliminate the present targets at this sight.

TRACK RENEWAL PROGRAM

The new 5"/31/2" g slotted sleeper track is really forging ahead with the end in sight. It looks like being a toss-up between our track and the Alice/Darwin track ---- that close.

Currently the new rails have been laid from the exit points at SASMEE Park Station to the end of the lily pad bridge and leading to the tunnel. The tunnel track has been constructed and is just waiting to be laid.

The only piece of track still to be constructed is the straight section adjacent to "Skewes Crossing" to the curve along the driveway. When completed we will have used approximately 2 1/2t of 25 x12 rail.

BOILER DONATION

For some time Brian Homann has had a boiler [similar to ours] plus a box of brand new tubes stored on his home property. As he could see no use for this equipment he has kindly donated same to SASMEE for possible use should ours fail at some time in the future. Many thanks to Brian.

SUBSCRIPTIONS

Please be advised that 2003 --2004 subscriptions are now

OVERDUE. If you have not paid you run the risk of being struck off the register. So post off a cheque in the mail before you forget.

SOME SASMEE HISTORY

August 1948

Clubroom foundations finished.

November 1948

Clubroom Erected

January 11th 1949

First meeting held at SASMEE PARK

"SOME SASMEE HISTORY" in the next issue of the Bulletin will be the 1953 Annual Report by the Hon. Sec. Vic Messer.-----
Interesting reading.

RAILWAY QUIZ

Q.-----How many SAR "F" Class tank locos were superheated?
Answer in the next Bulletin.

ANSWER to QUIZ ----- Last Bulletin

Q.-----What was the name of the wellknown carriage builder at Edwardstown, S.A. ?

A.-----Pengelly.

FOR SALE

Horizontal milling machine. Table size is 14" x 4" Arbor is #2 Morse taper. 1/4hp s.p. motor. 10 spindle speeds, including gackgear. Is on floor stand. Arbor, dividing head and small vice included. This machine is home made, based on plans in an old M.E. Although relatively small can do very useful work.[built 3 1/2" loco]
Reliable condition.

Currently occupying valuable shed floor space.

For further details, contact Bill Coles.

Editorial Note: The following pages in reduced size type were reprinted from original material. Apologies for the eye strain.

PRESIDENT'S REPORT FOR 2003
THE 76th ANNUAL GENERAL MEETING HELD ON AUGUST 12th 2003

Members, the following is a summary of the major events that have occurred during the past year.

- * I have again endeavoured to prepare a variety of entertainment for your enjoyment namely talks by professionals and members, slides, videos, films and club outings.
- * New members – 6 full Juniors – 3
- * Annual club lunch at ' Fresh Choice ' 50 people attended
- * Xmas BBQ put on free to members. 65 people attended. Hot 40.7 degrees.
- * Track renewal program is continuing of the 5 inch dual gauge track.
- * Loco trial / safety valve run – evening meal supplied – 60 people attended.
- * Four issues of BULLETIN were published with better photos incl. color
- * Wednesday workers continue to keep grounds and facilities looking excellent.
- * Public field days continue to be well patronized and supported by members.
- * Luckily no PFD's had to be cancelled due to inclement weather.
- * Interconnector (Skewes Crossing) brought into service with great benefits.
- * Club outings were Bay tram excursion and visit to Performance Wheels.
- * Amusement device debacle—sorted out but lost three public field days.
- * Annual show of work with some excellent displays.
- * Increases to our pool of locos with several changing hands.
- * Boat pond problem with weed and sludge resulting in a decision to drain and clean with professional help from Collex.
- * At Millswood station driver operated points were replaced by trailing points and signalling altered accordingly.
- * The 47th annual AALS convention was held at Penfield. SASMEE was unequalled by having 14 locos registered. The post convention run at SASMEE attracted some 80 attendees with a sumptuous lunch being provided.
- * One member died during the year— life member Frank Lee.
- * Coal bin to be constructed by Huntington Engineering.
- * A horizontal boiler and spare tubes donated by Brian Homann.
- * Excellent service by the ladies staffing the canteen. A big thankyou.

I wish to thank you, the members, for your help and input into keeping the club on a healthy footing and having confidence in me as your President. It has been indeed a pleasure to serve you. I would also take this opportunity to thank the outgoing Executive Committee for their support in helping to manage the affairs of SASMEE which during the last year have kept us very busy.

One should not pick out names however there are 3 members, unsung at that, who because of their "behind the scenes work" I feel deserve a special mention as the tasks that they perform are always taken for granted.

- * John Beal for always keeping the toilets spotless. (a shithouse job to be sure)
- * Graeme Driscoll for methodically doing his weekly spraying. (that's why you never see weeds growing uncontrollably on our property)
- * John Lewis for cleaning out all the smelly rubbish bins and disposal of same. (there's a lot of scents in that)

My appreciation to you all, we certainly have a Club to be proud of.

Barry Dunstan
PRESIDENT

SASMEE Locomotive Efficiency Trials Day 2003

(Abridged article for SASMEE Bulletin)

By

Allan Wallace
14/6/2003

Some years ago I was approached by fellow model engineer John Lyas about jointly building a model of the SAR/VR dynamometer car which is currently preserved at the Port Dock Railway Museum in Adelaide, South Australia. In due course, the model was completed and it has been seen at several conventions and tracks. I gave a talk at a club meeting recently and several members expressed an interest in holding a locomotive efficiency trials day. A date was fixed, a roster drawn up, officials appointed and a manual created. Saturday 14 June 2003 became the first, (but not the last!), SASMEE Locomotive Efficiency Trials Day.

Externally, the dynamometer car is a close 5" gauge replica of the prototype in its early livery. Internally, it is very modern. The front drawbar is linked to an electronic load cell, and the wheels drive a DC tachometer and an optical revolution counter. A box of electronics conditions the signals, converts them to digital format, and transmits them to a laptop computer carried on a conventional passenger truck behind the car.

The laptop computer displays a scrolling "paper" chart, like the original instrument table, but it reads data every second and stores the information on disk for subsequent display or printing.

A full technical description of the dynamometer car can be downloaded from my website, at www.avocetconsulting.com.au/modeleng. You can also download the graphical data from all the runs done during the trials day.

Figure 1 is a typical display.

Figure 1

We used the outer (7.25"/5" loop for all the tests. Locomotives towed the dynamometer car and a train for about 30 minutes. Coal was taken from a weighed batch and the firebox refilled to its starting depth at the end of the run. Only the load from the dynamometer car back was included in the work done tally. Two of the 5" engines were not set up for tender riding, so those drivers sat on the dynamometer car and hence were included in the train load (to their advantage).

The grades around the circuit are not severe, but generally the drawbar pull becomes a push at some places when the locomotive slows down and the train pushes the engine. The software was set to ignore negative drawbar force so that locomotive braking did not reduce the work tally.

To calculate the thermal efficiency, the useful work done at the drawbar (measured by the dynamometer car, in Joules) was divided by the energy released by the burnt coal.

Figure 2 shows the relative thermal efficiencies in rank order.

14 A

SASMEE Locomotive Efficiency trials 14/6/2003

% Thermal Effy

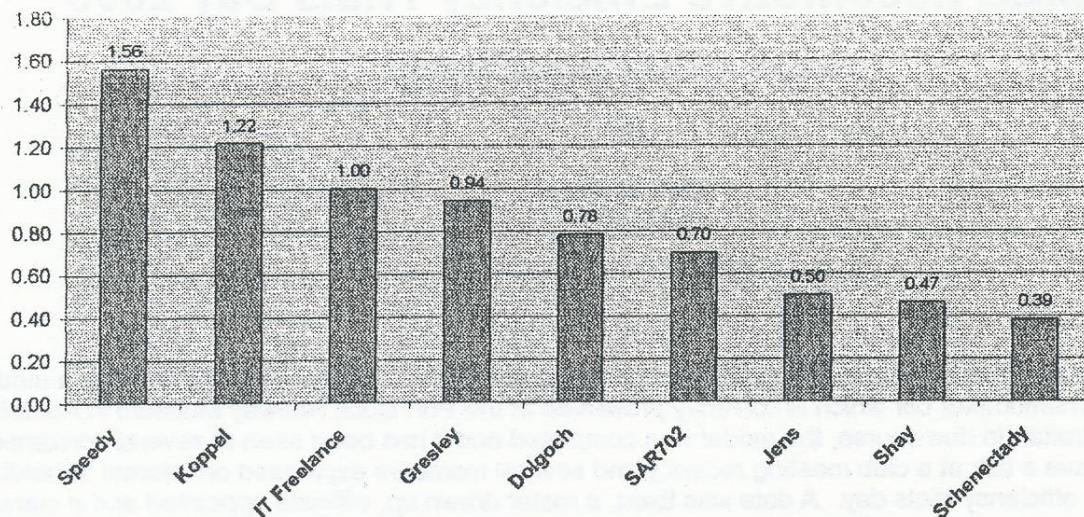


Figure 2

Efficiency is the ratio of output/input, so it is a valid index for comparing locomotives of any scale. Figure 3 breaks the efficiency into its two components for each engine, where drawbar power is the Output, and coal rate is a measure of Input.

SASMEE Locomotive Efficiency Trials

14/6/2003

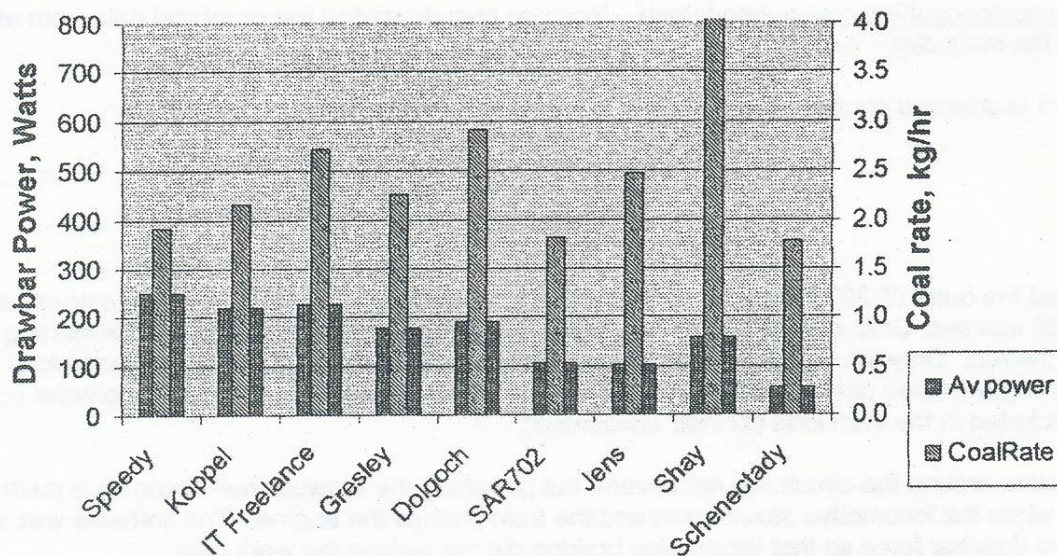


Figure 3

If the engines had been loaded equivalent to their potential performance levels, one would expect the larger locomotives to use more fuel, and do more work, than the smaller ones.

Owner	Loco	Wheels	Gauge inches	Trip time mins	Distance m	MaxForce Newtons	MaxPower Watts	MaxSpeed kph
Allan Wallace	Speedy	0-6-0T	5	31.4	4904	175	467	15.0
Bob Nash	Koppel	0-6-0	7.25	30.5	4904	233	613	14.1
Ian Thomas	IT Freelance	4-6-2	7.25	32.4	5747	237	632	15.1
Bryan Homann	Gresley	2-8-0	5	31.9	5559	179	537	17.6
Barry Dunstan	Dolgoch	0-4-0	7.25	30.9	5559	231	649	17.3
Bob Smith	SAR702	2-8-2	5	32.6	4581	134	322	13.9
Bill Coles	Jens	0-4-0	7.25	30.2	4904	105	256	13.5
Graham Driscoll	Shay	4 truck	7.25	29.6	5235	128	357	14.9
John Beal	Schenectady	0-6-0T	5	33.7	3596	93	148	12.2

Figure 4

In figure 5 the coal burnt, and the work done, have both been divided by the running time to express them as watts, and kg/hr, which allow direct comparison. The thermal efficiency can be obtained by dividing the average drawbar power by the coal rate (after conversion to watts). The last column signals whether the driver's mass was part of the train or not.

Loco	Av power Watts	AvSpeed kph	CoalRate kg/hr	Thermal Effy, %	Driver load?
Speedy	249	9.4	1.91	1.56	No
Koppel	219	9.7	2.16	1.22	Yes
IT Freelance	227	10.7	2.72	1.00	Yes
Gresley	178	10.3	2.26	0.94	No
Dolgoch	190	11.0	2.91	0.78	Yes
SAR702	105	8.5	1.80	0.70	Yes
Jens	102	9.7	2.46	0.50	Yes
Shay	157	10.7	4.05	0.47	Yes
Schenectady	57	6.4	1.78	0.39	Yes

Figure 5

This is the first trails day of its kind at SASMEE and it has been most instructive. Clearly, most of the engines were not working very hard, which would adversely affect their thermal efficiency. There would be an optimum power output where the efficiency is a maximum for any engine. One of the challenges for drivers is to choose a load near to this optimum. Inspection of the individual datalogs showed that Speedy was working against moderately dragging train brakes, and even had to pull the train downhill! For this reason this run produced the highest work done.

We felt that the biggest shortcoming in the procedure was the measurement of coal consumed. Even with the best intentions, one cannot be sure that the level of fuel in the firebox is the same before and after the run. The accuracy can only be improved by running longer or harder, and thereby burning more coal. Ideally, the coal consumed should be several times the volume of the fire. Koppel did not require any firing for the entire duration, because the mass of its fire was large compared to the coal consumed. This is a sure sign that Koppel's train was far too light to give it a proper run. At the other extreme, Speedy was working quite hard, and burnt about twice the mass of coal in her fire.

Drivers were directed to start with a full firebox, then refill with weighed coal to the same level at the end of the run. In most cases, the engines steamed so hard under the steady conditions that it was impossible to prevent significant steam loss from the safety valves. In these engines it would have been better to start and end with a lower level of fire. Of course, it is even more difficult to judge a partial refill!

Driving technique is a significant factor in the results and we all noted how our engines were different to drive under sustained non-stop conditions. We have developed our techniques and our engines to perform on field days, rather than for efficiency trials. In these unfamiliar circumstances I am sure we do not see the true potential of the engines, and some experience and practise will increase the measured efficiencies.

I always intended to briefly describe the winning locomotive, and feel mildly self-conscious that it was mine. I trust that this section won't be seen as indulgence on my part!

Speedy was designed by LBSC and took 600 hours over a period of 3 years to build. The valve gear and motion details were closely based on K.N.Harris's redesign.

There are needle roller bearings in the axleboxes, running on case-hardened axles. The cylinders (1.625" bore x 2.125" stroke) are bronze with plain stainless steel piston valve bobbins, without rings, according to

LBSC's practice. The pistons have two adjacent packing grooves, one with graphited yarn and the other with a Viton O ring.

The boiler is copper, with a screw-type regulator. Superheat is very high, with five stainless steel elements projecting right through the firebox for maximum radiant heat input. The grate is in cast iron and has a 50/50 gap/bar ratio at $\frac{1}{4}$ " pitch.

I sleeved down the axle pump to a displacement ratio of 1:256 with the cylinder displacement. This is less than half the designed displacement but it still has more than ample capacity. There is an injector fitted, which I rarely use.

There is a turbo generator fitted under the footplate, with a toroidal (zero magnetic cogging) armature.

According to the dynamometer car, her maximum output at the drawbar exceeds 500 watts, but at an average power of 250 watts she can be notched up for more efficient expansive running.

Thanks to the committee, the helpers and the drivers for helping make this an enjoyable and instructive day. We all think we will do better next year!



**Glen Templeman's 3 cyl. 4-6-0 has no problems
in making steam. 17/5/03**



When Craig Dunstan is not driving "DOLGOCH" he is firing
on his other loco RX 207 at Mt. Barker 18/5/02

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2003----- 2004

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